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Attention: **Commissioner of Patents**	Date: April 4, 2006
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Total pages, including cover sheet: 10

Comments

Please find attached an Amendment to the Claims for the pending application:

No. 10/661,466, Applicants, Vitaliano, et al; Russell S. Negin, Examiner, Art Unit 1631

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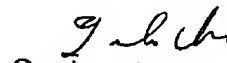

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Re: Amendment of Claims

This is an Amendment to the Claims for the pending application:

No. 10/660,466
Applicants, Franco Vitaliano & Gordana Vitaliano
Russell S. Negin, Examiner,
Art Unit 1631

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Claims

1. (Original): A quantum information processing platform comprising,
a plurality of quantum information processing elements each having,
a cage defining a cavity formed from a plurality of self-assembling protein molecules, and one or more cargo elements located within the cavity, wherein
at least one of the cargo elements comprises a qubit programmable into a plurality of logical states.

2. (Original): A quantum information processing platform according to claim 1, wherein the quantum information processing elements comprise,
receptors for capturing and positioning the one or more cargo elements within the cavity.

3. (Original): A quantum information processing platform according to claim 2, wherein the quantum information processing elements comprise,
a vesicle located within the cage and enclosing the one or more cargo elements, wherein the receptors extend through the vesicle to capture and position the cargo element within the vesicle.

4. (Original): A quantum information processing platform according to claim 3, wherein the quantum information processing elements comprise,
adaptors disposed between the receptors and the cage and binding to the receptors.

5. (Original): A quantum information processing platform according to claim 1, wherein the quantum information processing elements comprise,
a vesicle located within the cage and enclosing one or more cargo elements.

6. (Original): A quantum information processing platform according to claim 1, wherein the quantum information processing elements comprise,
molecular tethers for capturing and positioning one or more cargo elements within the cavity.

7. (Original): A quantum information processing platform according to claim 1, wherein the quantum information processing elements comprise,

direct cage bonding for capturing and positioning one or more cargo elements within the cavity.

8. (New:) A quantum information processing platform according to claim 1, wherein the quantum information processing elements comprise,

a functionalized cage for attaching one or more elements externally to the cage.

9. (Original): A quantum information processing platform according to claim 1, wherein the quantum information processing element comprise, receptors, molecular tethers and direct cage bonding for capturing and positioning one or more cargo elements within the cavity.

10. (Original): A quantum information processing platform according to claim 1, wherein the one or more cargo elements of a subset of the quantum information processing elements further comprises a non-permeable cavity.

11. (Original): A quantum information processing platform according to claim 3, wherein the one or more vesicles of a subset of the quantum information processing elements further comprises a non-permeable cavity.

12. (Original): A quantum information processing platform according to claim 1, wherein the cage is electrically neutral and inhibits charge transfer between the cage and its cargo elements.

13. (Original): A quantum information processing platform according to claim 1, wherein the cage reduces the tendency of a plurality of logical states in a coherent state to collapse into a decoherent state.

14. (Original): A quantum information processing platform according to claim 1, wherein the cage inhibits non-quantum information processing cargo elements from interfering with qubit cargo element operation in other cages.

15. (Original): A quantum information processing platform according to claim 3, wherein the vesicle is electrically neutral and inhibits charge transfer between the vesicle and its enclosed cargo elements.

16. (Original): A quantum information processing platform according to claim 3, wherein the vesicle is insulative and reduces the tendency of a plurality of logical states in a coherent state to collapse into a decoherent state.

17. (Original): A quantum information processing platform according to claim 4, wherein the receptors and adaptors are electrically neutral and inhibit charge transfer between the vesicle and cage and their cargo elements.

18. (Original): A quantum information processing platform according to claim 1, wherein the cage reduces contaminant background radiation to cargo carried within the cage.

19. (Original): A quantum information processing platform according to claim 3, wherein the vesicle reduces contaminant background radiation to cargo carried within the vesicle.

20. (Original): A quantum information processing platform according to claim 1, comprising a self-assembling framework of cages to structurally support one or more of the self-assembling quantum information processing elements.

21. (Original): A quantum information processing platform according to claim 1, comprising a self-assembling electrically neutral substrate of cages to structurally support one or more of the self-assembling quantum information processing elements.

22. (Original): A quantum information processing platform according to claim 1, comprising a self-assembling framework of cages to structurally order one or more self-aligning ones of the quantum information processing elements.

23. (Original): A quantum information processing platform according to claim 1, wherein the one or more cargo elements of a subset of the quantum information processing elements is a single cargo element comprising a qubit programmable into a plurality of logical states.

24. (Original): A quantum information processing platform according to claim 1, wherein the one or more cargo elements of a subset of the quantum information processing elements are a plurality of cargo elements.

25. (Original): A quantum information processing platform according to claim 23, wherein the plurality of cargo elements are qubits programmable into a plurality of logical states.

26. (Original): A quantum information processing platform according to claim 23, wherein at least some of the plurality of cargo elements are non-quantum information processing cargo elements.

27. (Currently amended): A quantum information processing platform according to claim 1, wherein the one or more cargo elements of a subset of the quantum information processing elements respond to stimuli internal and or external to the cage.

28. (Currently amended): A quantum information processing platform according to claim 3, wherein the one or more vesicles of a subset of the quantum information processing elements respond to stimuli internal and or external to the vesicle.

29. (Currently amended): A quantum information processing platform according to claim 1, wherein the one or more quantum information processing elements and their qubit and non-QIP cargo are used in vitro and or in vivo.

30. (Currently amended): A quantum information processing platform according to claim 23, wherein a subset of the non-quantum information processing cargo elements include one or more ~~therapeutic~~ single task and or multitask in vivo and or in vitro agents.

31. (Cancelled):

32. (Cancelled):

33. (Cancelled):

34. (Original): A quantum information processing platform according to claim 23, wherein a subset of the qubit and non-quantum information processing cargo elements include one or more quantum dots.

35. (Original): A quantum information processing platform according to claim 23, wherein a subset of the qubit and non-quantum information processing cargo elements include one or more photonic dots.

36. (Original): A quantum information processing platform according to claim 23, wherein a subset of the cargo elements include one or more liquids without dopants or with one or more dopants of any type.

37. (Original): A quantum information processing platform according to claim 23, wherein a subset of the qubit and non-quantum information processing cargo elements include a gas or vapor without dopants or with one or more dopants of any type.

38. (Original): A quantum information processing platform according to claim 1, wherein the at least one qubit of a subset of the plurality of quantum information processing elements are programmed by one or more pulses of electromagnetic radiation.

39. (Cancelled):

40. (Cancelled):

41. (Cancelled):